

We claim:

1. A device for aligning sheets prior to transferring the sheets to a sheet-processing machine, comprising at least one sheet-gripping device by the aid of which the sheet to be aligned is displaceable, said sheet-gripping device having at least one positioning table displaceable by an actuating drive in at least one of a sheet travel direction, transversely to said sheet travel direction, and in a direction wherein it is pivoted about an axis extending in a direction orthogonal to said sheet travel direction, the sheet to be aligned being fixable on said positioning table.

2. The sheet-aligning device according to claim 1, wherein said positioning table has at least one contact surface engageable by the sheet, said contact surface being formed with at least one opening connectable to a negative-pressure source.

3. The sheet-aligning device according to claim 1, wherein said positioning table is formed with a plurality of openings, respectively, connected to different negative-pressure chambers, which are separated from and disposed side-by-side one another, as viewed in the sheet travel direction, said negative-pressure chambers being connected to said negative-pressure source independently of one another.

4. The sheet-aligning device according to claim 1, wherein said positioning table is integrated in a feeding table.

5. The sheet-aligning device according to claim 1, wherein said positioning table has an underside facing away from said contact surface thereof, and including a plurality of elastic bars engaged by said positioning table at said underside thereof so that the weight of said positioning table is supported thereby.

6. The sheet-aligning device according to claim 1, wherein said positioning table is constructed as at least one of a ball table and a compound-table arrangement.

7. The sheet-aligning device according to claim 1, wherein said actuating drive has an electromagnetic positioning unit with at least one electromagnet, which is fixed in position relative to said positioning table and is assigned to one of a circumferential region of the positioning table and to a location arranged beneath said positioning table.

8. The sheet-aligning device according to claim 7, wherein said electromagnet is U-shaped.

9. The sheet-aligning device according to claim 1, wherein said positioning table is of polygonal construction.

102050 66974860

10. The sheet-aligning device according to claim 9, wherein said positioning table is square.

11. The sheet-aligning device according to claim 1, comprising a sheet-detection device for determining the position of at least one of a leading sheet edge and a lateral sheet edge and having at least one position sensor for detecting the sheet edge in the direction of the sheet surface.

12. The sheet-aligning device according to claim 11, wherein said position sensor assigned to said leading sheet edge is disposed on a pregripper cyclically displaceable with the machine.

13. The sheet-aligning device according to claim 11, wherein said position sensor is formed by one of a CCD-array camera, a capacitive sensor and an ultrasonic sensor.

14. The sheet-aligning device according to claim 7, including a control and/or regulating device for activating said at least one electromagnet.

15. The sheet-aligning device according to claim 2, including a control and/or regulating device for adjusting the negative

T020501-66974860

pressure to which said at least one opening formed in said contact surface of said positioning table is subjected.

16. The sheet-aligning device according to claim 9, wherein said sheet-detection device is coupled with a control and/or regulating device to form a regulating circuit.

17. The sheet-aligning device according to claim 7, including a measuring device for determining the electric current flowing through said at least one electromagnet.

18. The sheet-aligning device according to claim 7, including at least one Hall-effect sensor disposed in a bearing gap between said positioning table and at least said one electromagnet.

19. A method of aligning sheets prior to transferring the sheets to a sheet-processing machine, which comprises gripping by at least one sheet retainer a respective sheet to be aligned, displacing the sheet into a desired position, and contactlessly aligning at least one of a leading sheet edge in a direction transverse to a sheet travel direction and of lateral sheet edges in a direction parallel to the sheet travel direction.

FD2050-66971860

20. The method according to claim 19, which includes, before gripping the sheet by the sheet retainer, stopping the sheet by at least one stop acting in the sheet travel direction.

X02050 66924860